



TECH CENTER 1600/2908

JAN 3 0 2002

RECEIVED

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/855,294B

DATE: 01/22/2002

TIME: 17:16:09

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\01222002\I855294B.raw

4 <110> APPLICANT: Croce, Carlo
 5 Brenner, Charles
 6 Pekarski, Yuri
 10 <120> TITLE OF INVENTION: CRYSTAL STRUCTURE OF WORM NitFhit
 11 REVEALS THAT A Nit TETRAMER BINDS TWO Fhit DIMERS
 14 <130> FILE REFERENCE: CRO01.NP007
 16 <140> CURRENT APPLICATION NUMBER: 09/855,294B
 C--> 17 <141> CURRENT FILING DATE: 2001-05-14
 19 <150> PRIOR APPLICATION NUMBER: 60/204,713
 20 <151> PRIOR FILING DATE: 2000-05-16
 22 <160> NUMBER OF SEQ ID NOS: 11
 24 <170> SOFTWARE: FastSEQ for Windows Version 4.0
 26 <210> SEQ ID NO: 1
 27 <211> LENGTH: 276
 28 <212> TYPE: PRT
 29 <213> ORGANISM: Homo sapien
 31 <400> SEQUENCE: 1
 32 Met Thr Ser Phe Arg Leu Ala Leu Ile Gln Leu Gln Ile Ser Ser Ile
 33 1 5 10 15
 34 Lys Ser Asp Asn Val Thr Arg Ala Cys Ser Phe Ile Arg Glu Ala Ala
 35 20 25 30
 36 Thr Gln Gly Ala Lys Ile Val Ser Leu Pro Glu Cys Phe Asn Ser Pro
 37 35 40 45
 38 Tyr Gly Ala Lys Tyr Phe Pro Glu Tyr Ala Glu Lys Ile Pro Gly Glu
 39 50 55 60
 40 Ser Thr Gln Lys Leu Ser Glu Val Ala Lys Glu Cys Ser Ile Tyr Leu
 41 65 70 75 80
 42 Ile Gly Gly Ser Ile Pro Glu Glu Asp Ala Gly Lys Leu Tyr Asn Thr
 43 85 90 95
 44 Cys Ala Val Phe Gly Pro Asp Gly Thr Leu Leu Ala Lys Tyr Arg Lys
 45 100 105 110
 46 Ile His Leu Phe Asp Ile Asp Val Pro Gly Lys Ile Thr Phe Gln Glu
 47 115 120 125
 48 Ser Lys Thr Leu Ser Pro Gly Asp Ser Phe Ser Thr Phe Asp Thr Pro
 49 130 135 140
 50 Tyr Cys Arg Val Gly Leu Gly Ile Cys Tyr Asp Met Arg Phe Ala Glu
 51 145 150 155 160
 52 Leu Ala Gln Ile Tyr Ala Gln Arg Gly Cys Gln Leu Leu Val Tyr Pro
 53 165 170 175
 54 Gly Ala Phe Asn Leu Thr Thr Gly Pro Ala His Trp Glu Leu Leu Gln
 55 180 185 190
 56 Arg Ser Arg Ala Val Asp Asn Gln Val Tyr Val Ala Thr Ala Ser Pro
 57 195 200 205

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58 Ala Arg Asp Asp Lys Ala Ser Tyr Val Ala Trp Gly His Ser Thr Val
59      210                      215                      220
60 Val Asn Pro Trp Gly Glu Val Leu Ala Lys Ala Gly Thr Glu Glu Ala
61 225                      230                      235                      240
62 Ile Val Tyr Ser Asp Ile Asp Leu Lys Lys Leu Ala Glu Ile Arg Gln
63                      245                      250                      255
64 Gln Ile Pro Val Phe Arg Gln Lys Arg Ser Asp Leu Tyr Ala Val Glu
65                      260                      265                      270
66 Met Lys Lys Pro
67      275
70 <210> SEQ ID NO: 2
71 <211> LENGTH: 276
72 <212> TYPE: PRT
73 <213> ORGANISM: mouse
75 <400> SEQUENCE: 2
76 Met Ser Thr Phe Arg Leu Ala Leu Ile Gln Leu Gln Val Ser Ser Ile
77 1                      5                      10                      15
78 Lys Ser Asp Asn Leu Thr Arg Ala Cys Ser Leu Val Arg Glu Ala Ala
79                      20                      25                      30
80 Lys Gln Gly Ala Asn Ile Val Ser Leu Pro Glu Cys Phe Asn Ser Pro
81      35                      40                      45
82 Tyr Gly Thr Thr Tyr Phe Pro Asp Tyr Ala Glu Lys Ile Pro Gly Glu
83      50                      55                      60
84 Ser Thr Gln Lys Leu Ser Glu Val Ala Lys Glu Ser Ser Ile Tyr Leu
85 65                      70                      75                      80
86 Ile Gly Gly Ser Ile Pro Glu Glu Asp Ala Gly Lys Leu Tyr Asn Thr
87                      85                      90                      95
88 Cys Ser Val Phe Gly Pro Asp Gly Ser Leu Leu Val Lys His Arg Lys
89                      100                     105                     110
90 Ile His Leu Phe Asp Ile Asp Val Pro Gly Lys Ile Thr Phe Gln Glu
91                      115                     120                     125
92 Ser Lys Thr Leu Ser Pro Gly Asp Ser Phe Ser Thr Phe Asp Thr Pro
93      130                     135                     140
94 Tyr Cys Lys Val Gly Leu Gly Ile Cys Tyr Asp Met Arg Phe Ala Glu
95 145                     150                     155                     160
96 Leu Ala Gln Ile Tyr Ala Gln Arg Gly Cys Gln Leu Leu Val Tyr Pro
97                      165                      170                      175
98 Gly Ala Phe Asn Leu Thr Thr Gly Pro Ala His Trp Glu Leu Leu Gln
99                      180                      185                      190
100 Arg Ala Arg Ala Val Asp Asn Gln Val Tyr Val Ala Thr Ala Ser Pro
101                      195                      200                      205
102 Ala Arg Asp Asp Lys Ala Ser Tyr Val Ala Trp Gly His Ser Thr Val
103      210                      215                      220
104 Val Asp Pro Trp Gly Gln Val Leu Thr Lys Ala Gly Thr Glu Glu Thr
105 225                      230                      235                      240
106 Ile Leu Tyr Ser Asp Ile Asp Leu Lys Lys Leu Ala Glu Ile Arg Gln
107                      245                      250                      255
108 Gln Ile Pro Ile Leu Lys Gln Lys Arg Ala Asp Leu Tyr Thr Val Glu
109                      260                      265                      270

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110 Ser Lys Lys Pro
111      275
114 <210> SEQ ID NO: 3
115 <211> LENGTH: 288
116 <212> TYPE: PRT
117 <213> ORGANISM: X. laevis
119 <400> SEQUENCE: 3
120 Met Ala Gly Ala His Lys Pro Leu Ile Ala Val Cys Gln Met Thr Ser
121 1      5      10      15
122 Thr Ser Asp Lys Glu Lys Asn Phe Ala Thr Cys Ser Arg Leu Ile Arg
123      20      25      30
124 Glu Ala Ala Gly Arg Arg Ala Cys Met Val Phe Leu Pro Glu Ala Phe
125      35      40      45
126 Asp Tyr Ile Gly Gly Ser Ile Glu Glu Thr Leu Ser Leu Ala Glu Ser
127      50      55      60
128 Leu His Gly Asp Thr Ile Gln Arg Tyr Thr Gln Leu Ala Arg Glu Cys
129 65      70      75      80
130 Gly Leu Trp Leu Ser Leu Gly Gly Phe His Glu Lys Gly Pro Asn Trp
131      85      90      95
132 Asp Thr Asp Gln Arg Ile Ser Asn Ser His Val Val Val Asp Asn Thr
133      100     105     110
134 Gly His Ile Val Ser Val Tyr Arg Lys Ala His Leu Phe Asp Val Asp
135      115     120     125
136 Leu Gln Asn Gly Val Ser Leu Arg Glu Ser Ser Ser Thr Leu Pro Gly
137      130     135     140
138 Ala Glu Leu Ile Arg Pro Ile Thr Ser Pro Ala Gly Lys Ile Gly Leu
139 145     150     155     160
140 Gly Val Cys Tyr Asp Leu Arg Phe Pro Glu Phe Ser Leu Ala Leu Ala
141      165     170     175
142 Gln Gln Gly Ala Glu Leu Leu Thr Tyr Pro Ser Ala Phe Thr Leu Thr
143      180     185     190
144 Thr Gly Leu Ala His Trp Glu Val Leu Leu Arg Ala Arg Ala Ile Glu
145      195     200     205
146 Thr Gln Cys Tyr Val Val Ala Ala Gln Thr Asp Arg His Asn Glu
147      210     215     220
148 Lys Arg Thr Ser Tyr Gly His Ala Met Val Val Asp Pro Trp Gly Leu
149 225     230     235     240
150 Val Ile Gly Gln Cys Gln Glu Gly Thr Gly Ile Cys Tyr Ala Glu Ile
151      245     250     255
152 Asp Ile Pro Tyr Met Glu Arg Val Arg Arg Asp Met Pro Val Trp Arg
153      260     265     270
154 His Arg Arg Thr Asp Leu Tyr Gly Lys Ile Ser Phe Asn Lys Pro Asp
155      275     280     285
158 <210> SEQ ID NO: 4
159 <211> LENGTH: 307
160 <212> TYPE: PRT
161 <213> ORGANISM: S. cerevisiae
163 <400> SEQUENCE: 4
164 Met Thr Ser Lys Leu Lys Arg Val Ala Val Ala Gln Leu Cys Ser Ser

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```

165 1 5 10 15
166 Ala Asp Leu Thr Lys Asn Leu Lys Val Val Lys Glu Leu Ile Ser Glu
167 20 25 30
168 Ala Ile Gln Lys Lys Ala Asp Val Val Phe Leu Pro Glu Ala Ser Asp
169 35 40 45
170 Tyr Leu Ser Gln Asn Pro Leu His Ser Arg Tyr Leu Ala Gln Lys Ser
171 50 55 60
172 Pro Lys Phe Ile Arg Gln Leu Gln Ser Ser Ile Thr Asp Leu Val Arg
173 65 70 75 80
174 Asp Asn Ser Arg Asn Ile Asp Val Ser Ile Gly Val His Leu Pro Pro
175 85 90 95
176 Ser Glu Gln Asp Leu Leu Glu Gly Asn Asp Arg Val Arg Asn Val Leu
177 100 105 110
178 Leu Tyr Ile Asp His Glu Gly Lys Ile Leu Gln Glu Tyr Gln Lys Leu
179 115 120 125
180 His Leu Phe Asp Val Asp Val Pro Asn Gly Pro Ile Leu Lys Glu Ser
181 130 135 140
182 Lys Ser Val Gln Pro Gly Lys Ala Ile Pro Asp Ile Ile Glu Ser Pro
183 145 150 155 160
184 Leu Gly Lys Leu Gly Ser Ala Ile Cys Tyr Asp Ile Arg Phe Pro Glu
185 165 170 175
186 Phe Ser Leu Lys Leu Arg Ser Met Gly Ala Glu Ile Leu Cys Phe Pro
187 180 185 190
188 Ser Ala Phe Thr Ile Lys Thr Gly Glu Ala His Trp Glu Leu Leu Gly
189 195 200 205
190 Arg Ala Arg Ala Val Asp Thr Gln Cys Tyr Val Leu Met Pro Gly Gln
191 210 215 220
192 Val Gly Met His Asp Leu Ser Asp Pro Glu Trp Glu Lys Gln Ser His
193 225 230 235 240
194 Met Ser Ala Leu Glu Lys Ser Ser Arg Arg Glu Ser Trp Gly His Ser
195 245 250 255
196 Met Val Ile Asp Pro Trp Gly Lys Ile Ile Ala His Ala Asp Pro Ser
197 260 265 270
198 Thr Val Gly Pro Gln Leu Ile Leu Ala Asp Leu Asp Arg Glu Leu Leu
199 275 280 285
200 Gln Glu Ile Arg Asn Lys Met Pro Leu Trp Asn Gln Arg Arg Asp Asp
201 290 295 300
202 Leu Phe His
203 305
206 <210> SEQ ID NO: 5
207 <211> LENGTH: 291
208 <212> TYPE: PRT
209 <213> ORGANISM: S. cerevisiae
211 <400> SEQUENCE: 5
212 Met Ser Ala Ser Lys Ile Leu Ser Gln Lys Ile Lys Val Ala Leu Val
213 1 5 10 15
214 Gln Leu Ser Gly Ser Ser Pro Asp Lys Met Ala Asn Leu Gln Arg Ala
215 20 25 30
216 Ala Thr Phe Ile Glu Arg Ala Met Lys Glu Gln Pro Asp Thr Lys Leu

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```

217          35          40          45
218 Val Val Leu Pro Glu Cys Phe Asn Ser Pro Tyr Ser Thr Asp Gln Phe
219          50          55          60
220 Arg Lys Tyr Ser Glu Val Ile Asn Pro Lys Glu Pro Ser Thr Ser Val
221 65          70          75          80
222 Gln Phe Leu Ser Asn Leu Ala Asn Lys Phe Lys Ile Ile Leu Val Gly
223          85          90          95
224 Gly Thr Ile Pro Glu Leu Asp Pro Lys Thr Asp Lys Ile Tyr Asn Thr
225          100          105          110
226 Ser Ile Ile Phe Asn Glu Asp Gly Lys Leu Ile Asp Lys His Arg Lys
227          115          120          125
228 Val His Leu Phe Asp Val Asp Ile Pro Asn Gly Ile Ser Phe His Glu
229          130          135          140
230 Ser Glu Thr Leu Ser Pro Gly Glu Lys Ser Thr Thr Ile Asp Thr Lys
231 145          150          155          160
232 Tyr Gly Lys Phe Gly Val Gly Ile Cys Tyr Asp Met Arg Phe Pro Glu
233          165          170          175
234 Leu Ala Met Leu Ser Ala Arg Lys Gly Ala Phe Ala Met Ile Tyr Pro
235          180          185          190
236 Ser Ala Phe Asn Thr Val Thr Gly Pro Leu His Trp His Leu Leu Ala
237          195          200          205
238 Arg Ser Arg Ala Val Asp Asn Gln Val Tyr Val Met Leu Cys Ser Pro
239          210          215          220
240 Ala Arg Asn Leu Gln Ser Ser Tyr His Ala Tyr Gly His Ser Ile Val
241 225          230          235          240
242 Val Asp Pro Arg Gly Lys Ile Val Ala Glu Ala Gly Glu Gly Glu Glu
243          245          250          255
244 Ile Ile Tyr Ala Glu Leu Asp Pro Glu Val Ile Glu Ser Phe Arg Gln
245          260          265          270
246 Ala Val Pro Leu Thr Lys Gln Arg Arg Phe Asp Val Tyr Ser Asp Val
247          275          280          285
248 Asn Ala His
249          290
252 <210> SEQ ID NO: 6
253 <211> LENGTH: 276
254 <212> TYPE: PRT
255 <213> ORGANISM: S. pombe
257 <400> SEQUENCE: 6
258 Met Thr Leu Ala Ala Val Ala Gln Leu Asn Ser Ser Gly Ser Ile Leu
259 1          5          10          15
260 Lys Asn Leu Ala Ile Cys Lys Glu Leu Ile Ser Gln Ala Ala Ala Lys
261          20          25          30
262 Gly Ala Lys Cys Ile Phe Phe Pro Glu Ala Ser Asp Phe Ile Ala His
263          35          40          45
264 Asn Ser Asp Glu Ala Ile Glu Leu Thr Asn His Pro Asp Cys Ser Lys
265          50          55          60
266 Phe Ile Arg Asp Val Arg Glu Ser Ala Thr Lys His Ser Ile Phe Val
267 65          70          75          80
268 Asn Ile Cys Val His Glu Pro Ser Lys Val Lys Asn Lys Leu Leu Asn

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VERIFICATION SUMMARY

DATE: 01/22/2002

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TIME: 17:16:11

Input Set : A:\PTO.VSK.txt

Output Set: N:\CRF3\01222002\I855294B.raw

L:17 M:271 C: Current Filing Date differs, Replaced Current Filing Date

L:378 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:8

L:439 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10